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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
BAYARD, DJENANE M	
ART UNIT	**PAPER NUMBER**
2141	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/714,406	BAHL ET AL.	
	Examiner	Art Unit	
	Djenane M. Bayard	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 20-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 20-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to amendment filed on 11/02/04 in which claims 1-15 and 20-27 are pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Regarding claims 23, 26, the phrase " certain" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "certain"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Response to Argument

2. Applicant's arguments with respect to claims 1, 10, 20-22 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-20 and 23-27 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,671,259 to He et al in view of U.S. Patent application No. 2005/0022203 to Zisapel et al.

a. As per claim 1, He et al teaches a system for performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49), the system comprising: a first domain name server deployed on an Internet backbone (DNS-B) (See col. 5, lines 52-54); and a plurality of load balancing domain name servers (DNS-LBs) (See col. 5, lines 59-61 and col. 4, lines 66-67), the DNS-LBs having stored therein IP address information of the multiple globally-dispersed servers to be load balanced (See col. 10, lines 15-32), the (DNS-LBs) each sending mapping information to the DNS-B relating the DNS-LB's IP address to an IP address of the DNS-ISP to which it is in close physical proximity (See col. 7, lines 29-34), the DNS-LBs determining performance characteristics of each of the multiple globally-dispersed servers (See col. 9, lines 66-67 and col. 10, lines 1). (Remarks: The LB server and the LBS selector perform the function of domain name server since they translate domain names into Internet Protocol (IP) address or numbers). However, He et al fails to teach wherein the clients are placed in physical proximity with the DNS.

Zisapel et al teaches a load balancing system. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

b. As per claim 2, He et al teaches wherein the DNS-B stores the mapping information for the plurality of DNS-LBs to forward IP address queries to one of the DNS-LBs closest to the DNS-ISP from which the IP address query originated (See col. 10, lines 15-32 and col. 7, lines 29-34), and wherein the DNS-LB closest to the DNS-ISP returns the IP address to the DNS-ISP of the server having the best performance characteristics (See col. 4, lines 5-15).

c. As per claim 3, He et al teaches wherein the DNS-B stores the mapping information for the plurality of DNS-LBs to forward IP address queries to one of the DNS-LBs closest to the DNS-ISP from which the IP address query originated (See col. 10, lines 15-32 and col. 7, lines 29-34), and wherein the DNS-LB closest to the DNS-ISP returns the IP address of the DNS-LB to the DNS-ISP (See col. 4, lines 1-4).

d. As per claim 4, He et al teaches wherein the DNS-B provides its IP address information to the DNS-A to enable the DNS-A to forward IP address queries to the DNS-B (See col. 5, lines 50-52).

e. As per claim 5, He et al teaches wherein the DNS-B receives IP address information from the DNS-A for the servers to be load balanced (See col. 11, lines 1-7).

f. As per claim 6, He et al teaches wherein the DNS-LB is a client of the DNS-ISP (See col. 5, lines 29-39).

g. As per claim 7, He et al teaches wherein a DNS-B deployed on each Internet backbone, and wherein each DNS-B contains the mapping information for all of the DNS-LBs stored therein (See col. 10, lines 15-32).

h. As per claim 8, He et al teaches wherein the DNS-LB transmits updated mapping information upon a change of an IP address of the DNS-ISP (See col. 6, lines 14-27).

i. As per claim 9, He et al teaches wherein each of the DNS-LBs transmit performance information of the servers to the DNS-B, and wherein the DNS-B utilizes the mapping information to determine the proper DNS-LB (See col. 10, lines 15-32) performance information to utilize to select the IP address of the server having the best performance characteristics to return to the DNS-ISP from which an IP address query originated (See col. 11, lines 60-67).

j. As per claim 10, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having

an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49), the method comprising the steps of receiving IP address information from the DNS-A for the servers to be load balanced (See col. 11, lines 1-13); providing the IP address information to a plurality of load balancing domain name servers (DNS-LB) (See col. 11, lines 20-22); receiving mapping information associating DNS-ISP IP address information to IP address information of a proximately located DNS-LB capable of determining server performance from a location physically proximate to the ISP's point of presence and referring address inquiries from a DNS-ISP to a physically proximate DNS-LB in accordance with the mapping information (See col. 9, lines 27-67).

Zisapel et al teaches a load balancing system. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

k. As per claim 11, He et al teaches a computer-readable medium having computer executable-instructions (See col. 10, lines 44-55).

l. As per claim 12, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49); receiving IP address information for the servers (See col. 10, lines 23-25); monitoring performance of the servers at the received IP addresses (See col. 7, lines 55-60); and providing at least one IP address for a server in response to a name query selected based on the monitoring step (See col. 5, line 66-67 and col. 6, lines 1). However, He et al fails to teach obtaining, by a load balancing domain name server (DNS-LB), IP address information for a DNS-ISP located in close physical proximity to the DNS-LB; providing a mapping of an IP address of the DNS-LB to the IP address information of the DNS-ISP to an external domain name server.

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

m. As per claim 13, He et al teaches a method further comprising the steps of detecting a change in the DNS-ISP IP address; and updating the mapping of the IP address of the DNS-LB

to the IP address information of the DNS-ISP to the external domain name server (See col. 9, lines 13-67).

n. As per claim 14, He et al teaches wherein comprising the steps of receiving selection criteria for the selection of an IP address; receiving a name query from the DNS-ISP (See col. 5, lines 47-49); and wherein the step of providing at least one IP address for a server in response to a name query selected based on the monitoring step further comprises the step of providing at least one IP address for a server in response to a name query selected based on the monitoring step and on the selection criteria (See col. 5, line 66-67 and col. 6, lines 1).

o. As per claim 15, He et al teaches a computer-readable medium having computer-executable instructions (See col. 10, lines 44-55).

p. As per claim 20, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through Internet service providers (ISPs) at a point of presence (POP), (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith containing information regarding the IP addresses of the servers (See col. 5, lines 45-49), the method comprising the steps of: deploying a first plurality of load balancing domain name servers (DNS-LBs) in close physical proximity to the ISP POPS (See col. 5, lines 59-61 and col. 4, lines 66-67); deploying a second plurality of second level domain name servers (DNS-Bs) on the Internet backbones and regional provides (See col. 5, lines 52-54); communicating IP address

information for the DNS-Bs to the DNS-As to enable the DNS-As to refer name queries to the DNS-Bs; monitoring, by the DNS-LBs at a location physically proximate to the ISP POP, performance of the servers (See col. 7, lines 55-60); and providing, by the DNS-LB in response to a query from the DNS-ISP, the IP address of a server based on the step of monitoring (See col. 9, lines 66-67 and col. 10, lines 1). However, He et al fails to teach providing, by the DNS-LBs to the DNS-B, mapping information associating an IP address of the DNS-LB to an IP address of the physically proximate DNS-ISP to enable the DNS-B to refer name queries from a DNS-ISP to the physically proximate DNS-LB and communicating IP address information of the servers to the DNS-LBs (See col. 10, lines 15-32);

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

q. As per claim 23, He et al teaches a method for load balancing: content servers, each of the content servers associated with a domain name, the method comprising: receiving a request to resolve the domain name from an ISP DNS server: identifying at least one load balancing server from a group of load balancing servers (See col. 5, lines 54-67); sending the IP address of

the identified load balancing server to the ISP DNS server, the identified load balancing server configured to determine at least one of the content servers with certain characteristics relative to the location and to resolve the domain name with an LP address associated with the determined content server (See col. 5, lines 45-63).

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order to indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

r. As per claims 24 and 27, He et al in view of Zisapel et al teaches the claimed invention as described above. However, He et al fails to teach wherein the certain characteristics include load level, availability, network latency, or network cost.

Zisapel et al teaches wherein the certain characteristics include load level, availability, network latency, or network cost (See page 4, paragraph [0040]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the certain characteristics include load level, availability, network latency, or network cost as taught by Zisapel et al in the claimed invention of He et al in

order to indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

s. As per claim 25, He et al in view of Zisapel et al teaches the claimed invention as described above. However, He et al fails to teach wherein the identified load balancing server is situated closest to the ISP DNS server among the group of load balancing servers.

Zisapel et al teaches wherein the identified load balancing server is situated closest to the ISP DNS server among the group of load balancing servers.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the identified load balancing server is situated closest to the ISP DNS server among the group of load balancing servers as taught by Zisapel et al in the claimed invention of He et al in order to indicate subnets and the best server farms site or sites to which request from a particular subnet should be routed (See page 4, paragraph [0038]).

t. As per claim 26, He et al teaches a system far load balancing a group of content servers located at multiple sites, the group of content servers. associated with a domain name, each content server configured to interact with clients through ISP DNS servers associated with the clients, the system comprising: load balancing servers configured to resolve the domain name with an IP address associated with at least one of the content servers, , each load balancing server also configured to monitor the content servers and to resolve the domain name with the LP address of at least one of the content servers with certain characteristics relative to the location of the load balancing server (See col. 3, lines 39-54), a referral server configured to receive requests

to resolve the domain name from the ISF DNS servers, the referral server configured to respond to each request by determining at least one of the load balancing servers that is proximate to the ISP DNS server from which the request was received and referring the ISP DNS server to the determined load balancing server (See col. 3, lines 65-67 and col. 4, lines 1-25); and wherein each load balancing server responds to. each request by determining at least one of the content servers that has certain characteristics relative to the location and by resolving the domain name in]n the request with the IP address of the determined content server (See col. 5, lines 45-63).

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order to indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

5. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,671,259 to He et al in view of U.S. Patent application No. 2005/0022203 to Zisapel et al and further in view of U.S. Patent Application No. 2004/0162901 to Mangipudi et al.

a. As per claim 21, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through

Internet service providers (ISPs) at a point of presence (POP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith containing information regarding the IP addresses of the servers (See col. 5, lines 45-49) and providing, by the DNS-ISP-LB in response to a query from the client, the IP address of a server based on the step of monitoring (See col. 9, lines 66-67 and col. 10, lines 1). However, He et al fails to teach deploying a first plurality of measurement service agents (MServices) in close physical proximity to the ISP POPs; monitoring, by the MServices at a location physically proximate to the ISP POP, performance of the servers.

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

Mangipudi et al teaches a method and apparatus for policy based class service and adaptive service level management within the context of an Internet and intranet. Furthermore, Mangipudi et al teaches wherein a plurality of agents is deployed and monitoring performance of the servers (See page 4, paragraph [0039]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate deploying a plurality of agents and monitoring performance of the

servers as taught by Mangipudi et al in the claimed invention of He et al in order to enable request to be sent to the most appropriate and optimal server (See page 4, paragraph [0039]).

b. As per claim 22, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through Internet service providers (ISPs) at a point of presence (POP) (See col. 5, lines 45-49), each ISP having a load balancing domain name server (DNS-ISP-LB), the servers further having an authoritative domain name server (DNS-A) associated therewith containing information regarding the IP addresses of the servers (See col. 5, lines 45-49) and providing, by the DNS-ISP-LB in response to a query from the client, an IP address of the Mservice (See col. 4, lines 1-4). However, He et al fails to teach deploying a first plurality of measurement service agents (MServices) in close physical proximity to the ISP POPS; monitoring, by the MServices at a location physically proximate to the ISP POP, performance of the servers; However, He et al fails to teach wherein each ISP having a domain name server (DNS-ISP).

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

Mangipudi et al teaches a method and apparatus for policy based class service and adaptive service level management within the context of an Internet and intranet. Furthermore, Mangipudi et al teaches wherein a plurality of agents is deployed and monitoring performance of the servers (See page 4, paragraph [0039]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate deploying a plurality of agents and monitoring performance of the servers as taught by Mangipudi et al in the claimed invention of He et al in order to enable request to be sent to the most appropriate and optimal server (See page 4, paragraph [0039]).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Load Distribution for scalable web servers: Summer Olympics 1996- A case study by German Goldszmidt and Andy Stanford –Clark. IBM Watson Research Center.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Djenane M. Bayard whose telephone number is (571) 272-3878. The examiner can normally be reached on Monday- Friday 5:30 AM- 3:00 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Djenane Bayard

Patent Examiner

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER